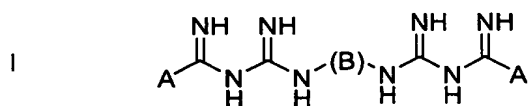
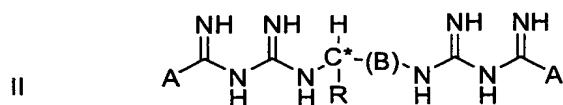


# WHAT IS CLAIMED IS:

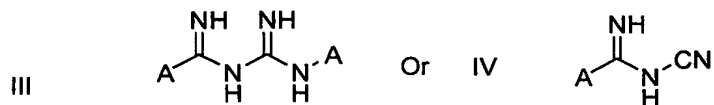
1. A compound having one of the following structures:



Or



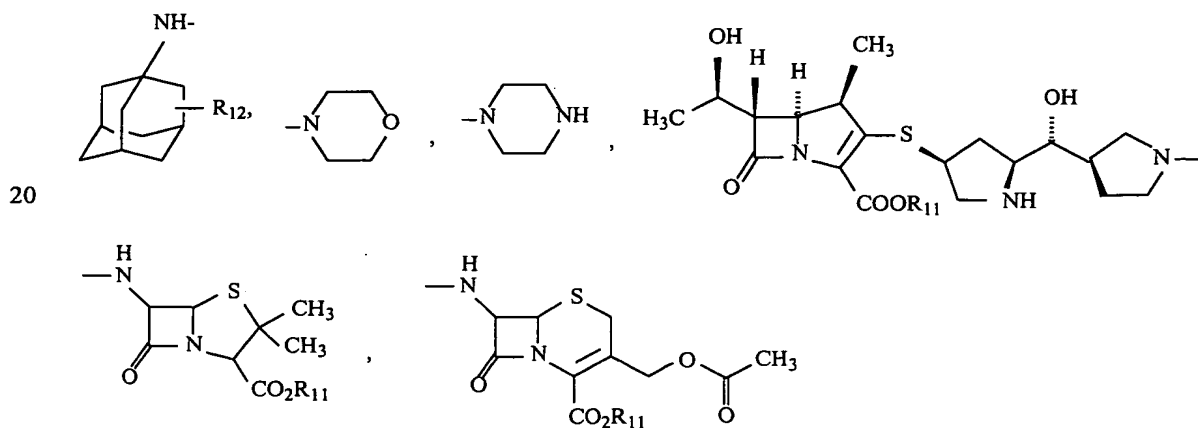
Or



5

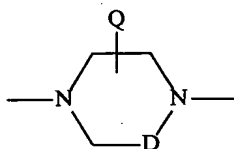
10 wherein:

- a) each A is the same or different, and is selected from the group consisting of  
i) hydrogen, ii) a nitrile, iii) an amino, iv) an antibacterial agent, v) an  
antibiotic, vi) a quinolone, vii) an azaquinolone, and viii) one of the  
following groups:



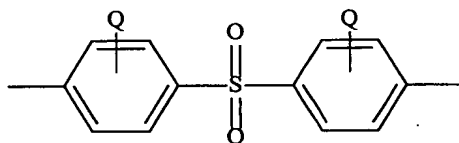
where  $R_{12}$  is hydrogen or  $C_1$ - $C_6$  straight or branched alkyl, and  $R_{11}$  is hydrogen, lower alkyl, an aromatic group or a heterocyclic group, with the proviso that with respect to structures I-III, both A's cannot be the adamantane structure above at the same time;

- 5 b) B is a straight chain or branched  $C_1 - C_{30}$  alkyl group, which may be interrupted by oxygen, sulfur, optionally substituted aromatic nuclei, sulfoxide, optionally substituted cyclohexane, nitrogen optionally substituted with  $-NH-C(NH)-NH-C(NH)-A$  where A is defined above, tris (2-aminoethyl)amine, a heterocycle of the following structure:



10

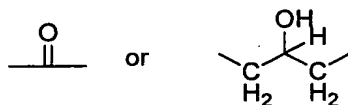
where D is 1-3 carbon atoms and Q is hydrogen, halogen or lower alkyl; or



15

where Q is hydrogen, halogen or lower alkyl; or

20

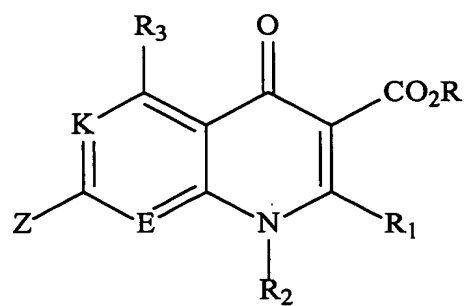
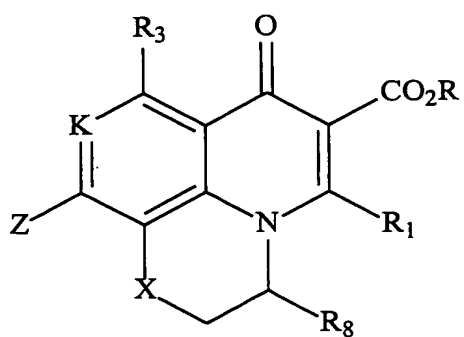


25

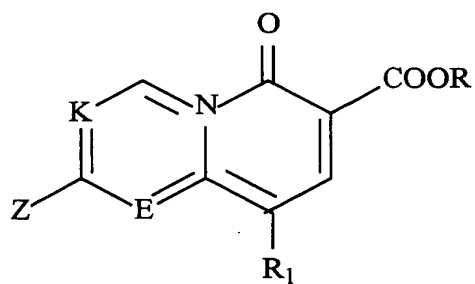
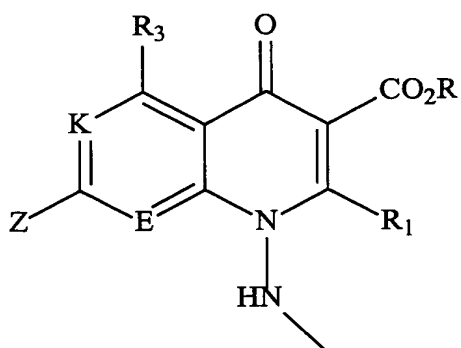
- a hydrophilic moiety; and

- c) R is hydrogen or  $C_1 - C_6$  straight or branched alkyl.

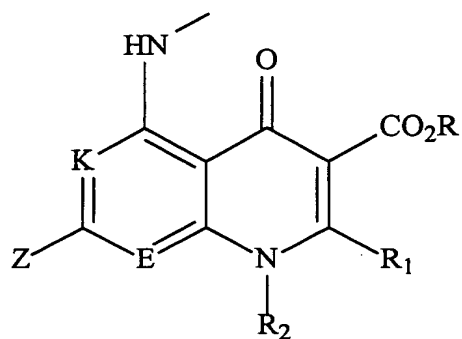
2. The compound of claim 1, wherein A is an antibacterial agent selected from the group consisting of



or

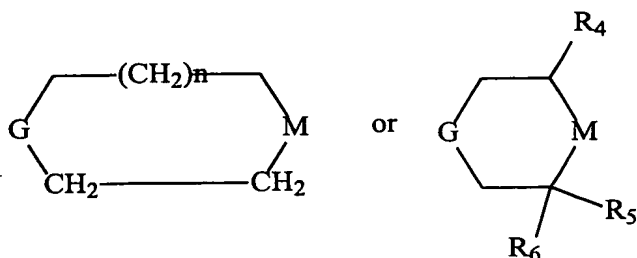


or



where Z is one or more heterocyclic rings containing at least one N atom

or



5

which may be attached to the structure above through any available point of attachment;

- 10 where n is 0 to 3; R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are each independently hydrogen or lower alkyl or alkylene; G and M are independently O, S or NR<sub>10</sub>; where R<sub>10</sub> is hydrogen, -C(N)-NH-CN, halogen, a single bond, or lower alkyl or alkylene;

E is nitrogen or CR<sub>10</sub>, where R<sub>10</sub> is hydrogen or halogen;

K is nitrogen or CR<sub>7</sub>, where R<sub>7</sub> is hydrogen, nitro, halogen, nitrile,

- 15 carboxamide, carboxyl or an ester;

R is hydrogen or lower alkyl;

R<sub>1</sub> is hydrogen, a lower arylalkyl group having 1-6 carbon atoms, an alkyl group having 1-4 carbon atoms in the aliphatic part and 6 to 10 carbon atoms in the aromatic part, or an aryl group having 6 to 10 carbon atoms;

- 20 R<sub>2</sub> is an alkyl group having one to six carbon atoms; a cycloalkyl group having 3 to 7 carbon atoms optionally substituted with halogen; 2,4-difluorophenyl or 2- or 4-fluorophenyl; amino; lower alkylamino; propylamino; N-formyl-lower alkylamino or di-lower-alkylamino; a vinyl group; a 2-fluoroethyl group; a haloalkyl group or a 2-hydroxyalkyl group; phenyl or substituted phenyl wherein  
25 the phenyl ring is substituted with one or two or three substituents independently selected from C1 to C6 alkyl, halogen, methylenedioxy and hydroxy; alkoxy or trifluoromethyl; 2-, 3-, or 4- pyridine; 2- or 3-thiophene; 2-imidazole; 2-oxazole or 2-thiazole; a pyridyl or adamantyl group; or a benzoxazine group;

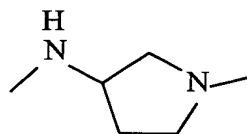
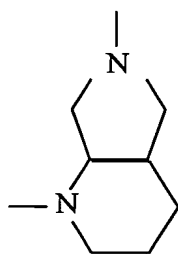
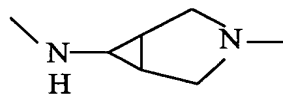
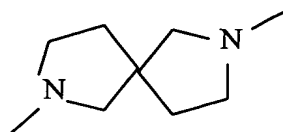
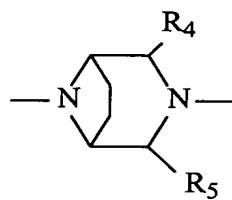
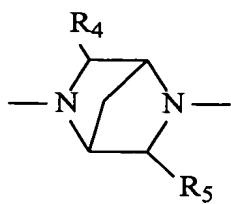
$R_3$  is a hydrogen, amino, substituted amino, halogen or a lower alkyl group;

$R_8$  is hydrogen or lower alkyl; and X is methylene, O, S or  $NR_9$ , where  $R_9$  is hydrogen or lower alkyl.

5

3. A compound according to claim 2, wherein Z is selected from the group consisting of

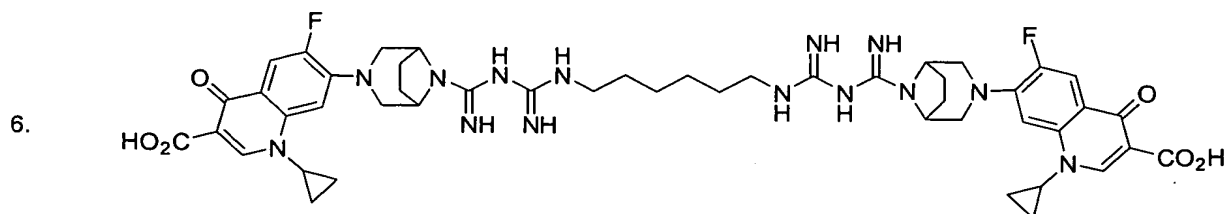
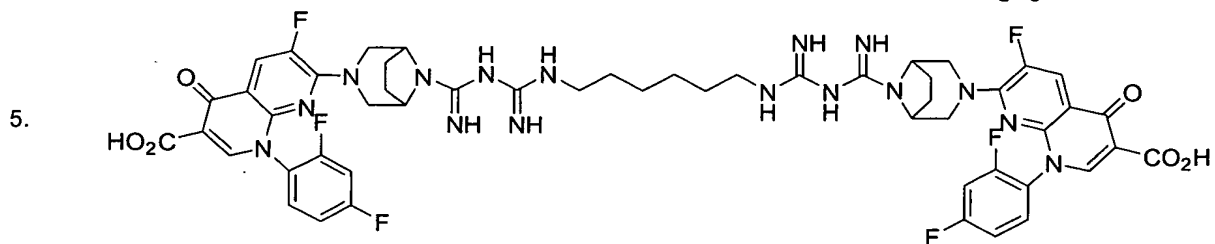
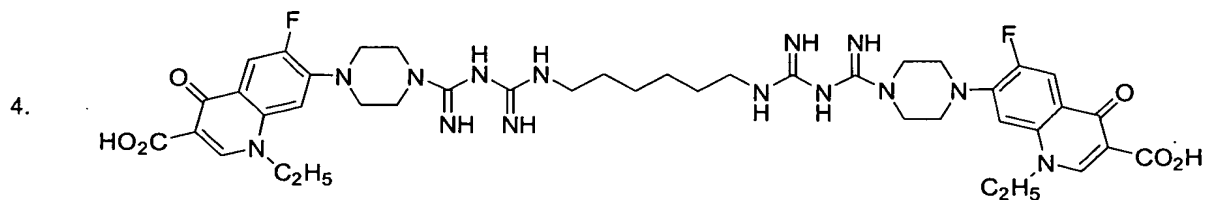
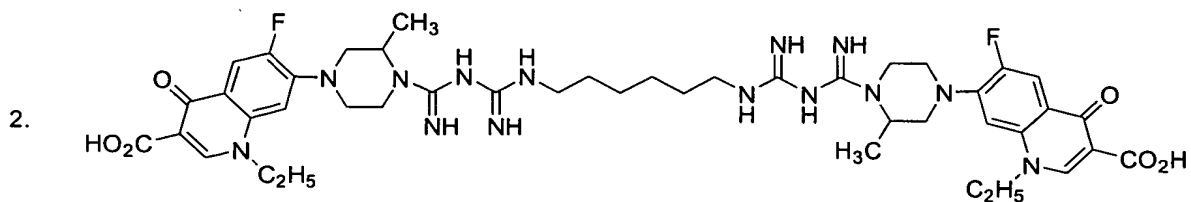
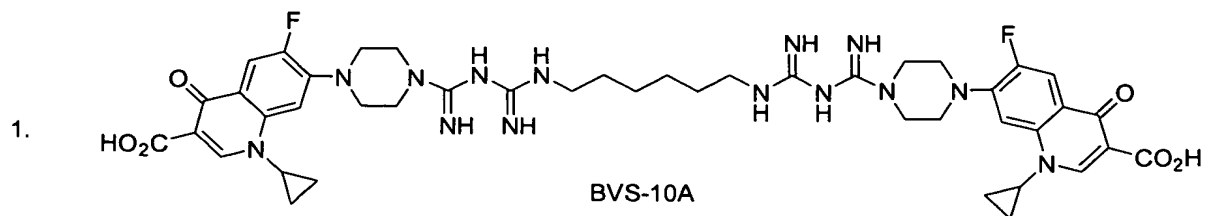
10

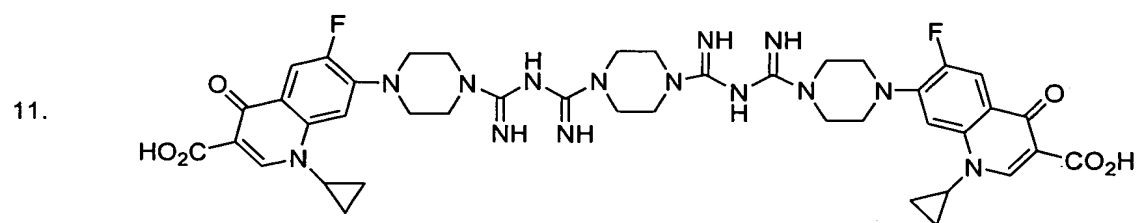
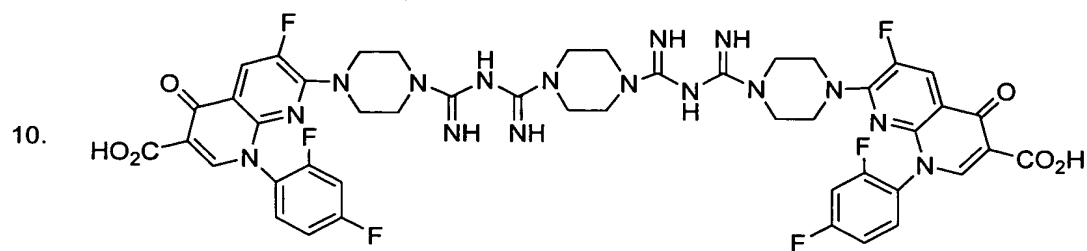
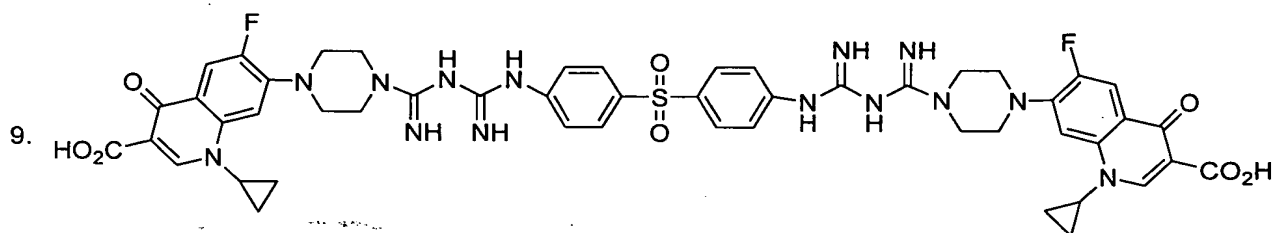
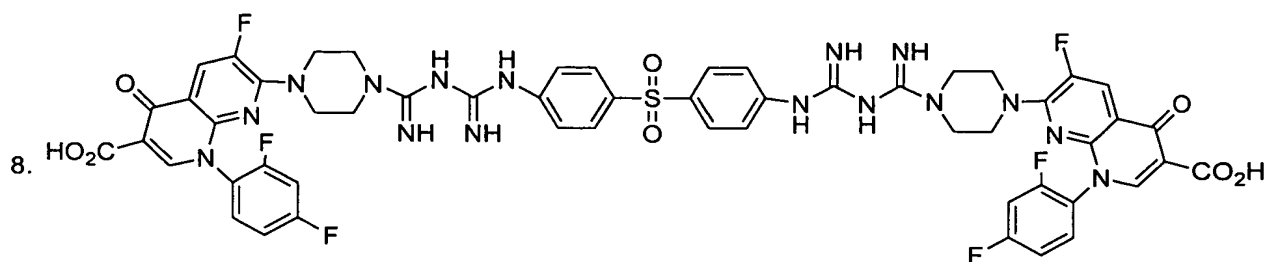
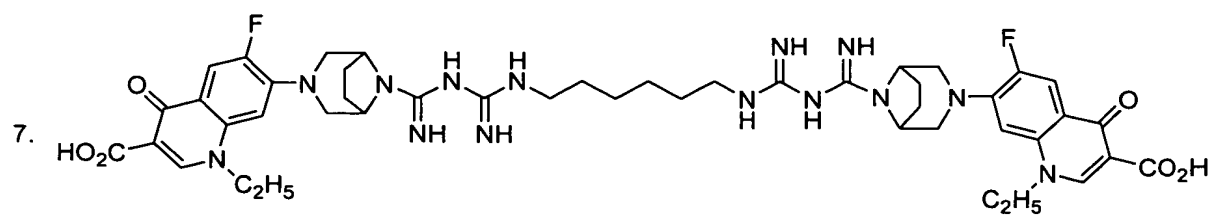


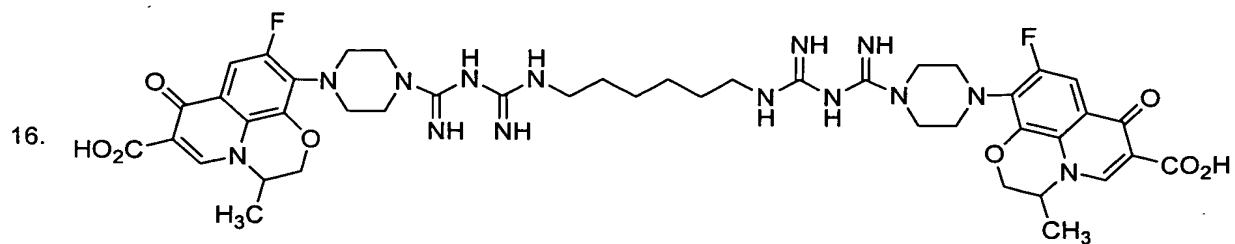
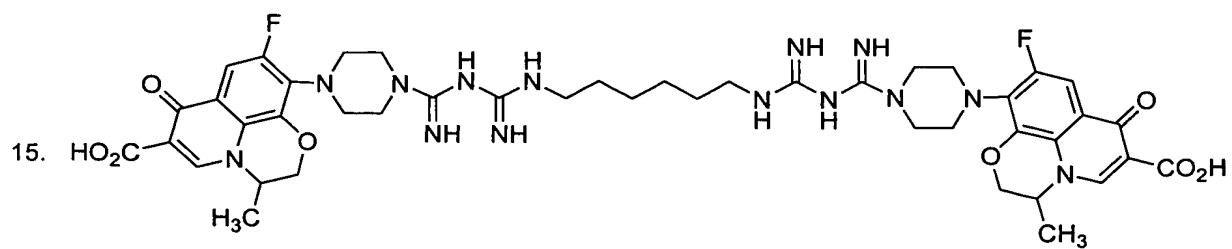
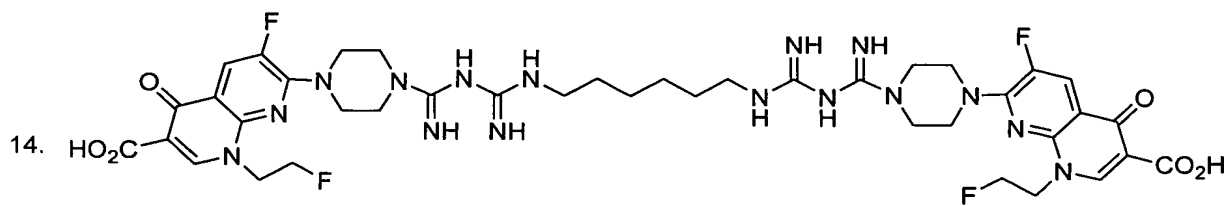
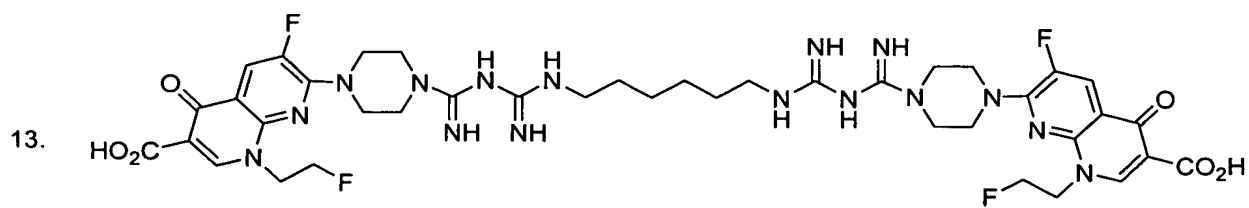
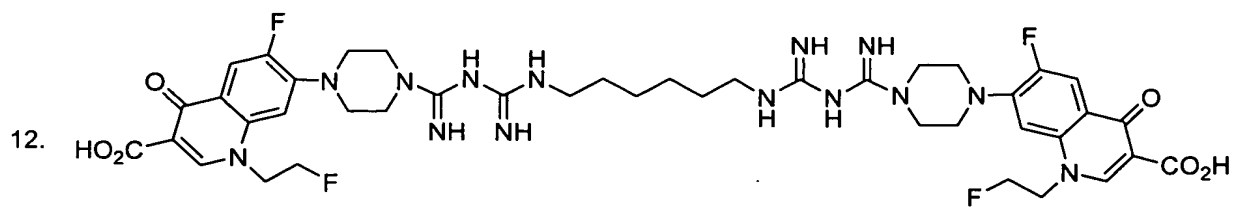
where  $R_4$  and  $R_5$  are independently hydrogen or lower alkyl.

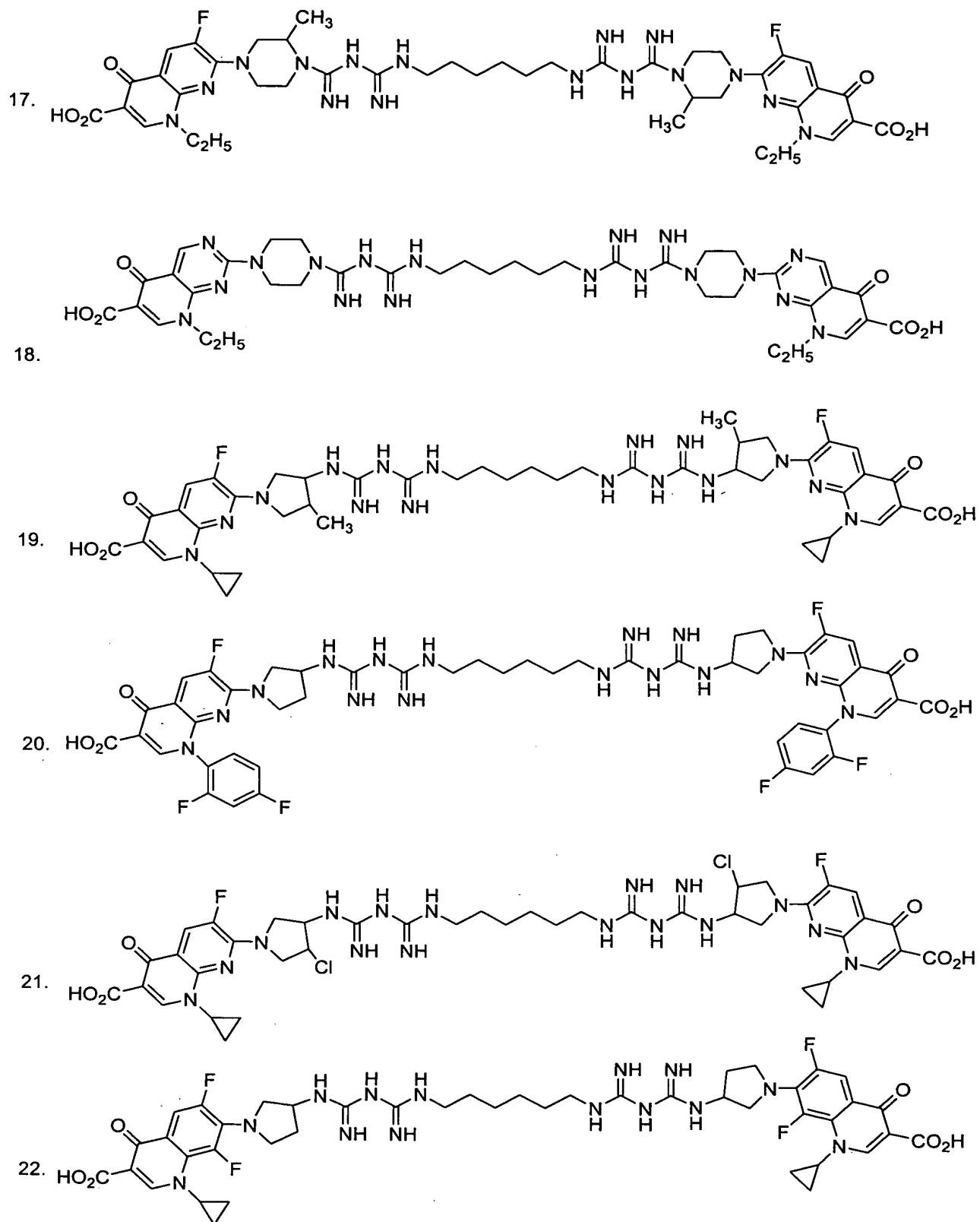
4. A compound according to claim 1, selected from the group consisting of:

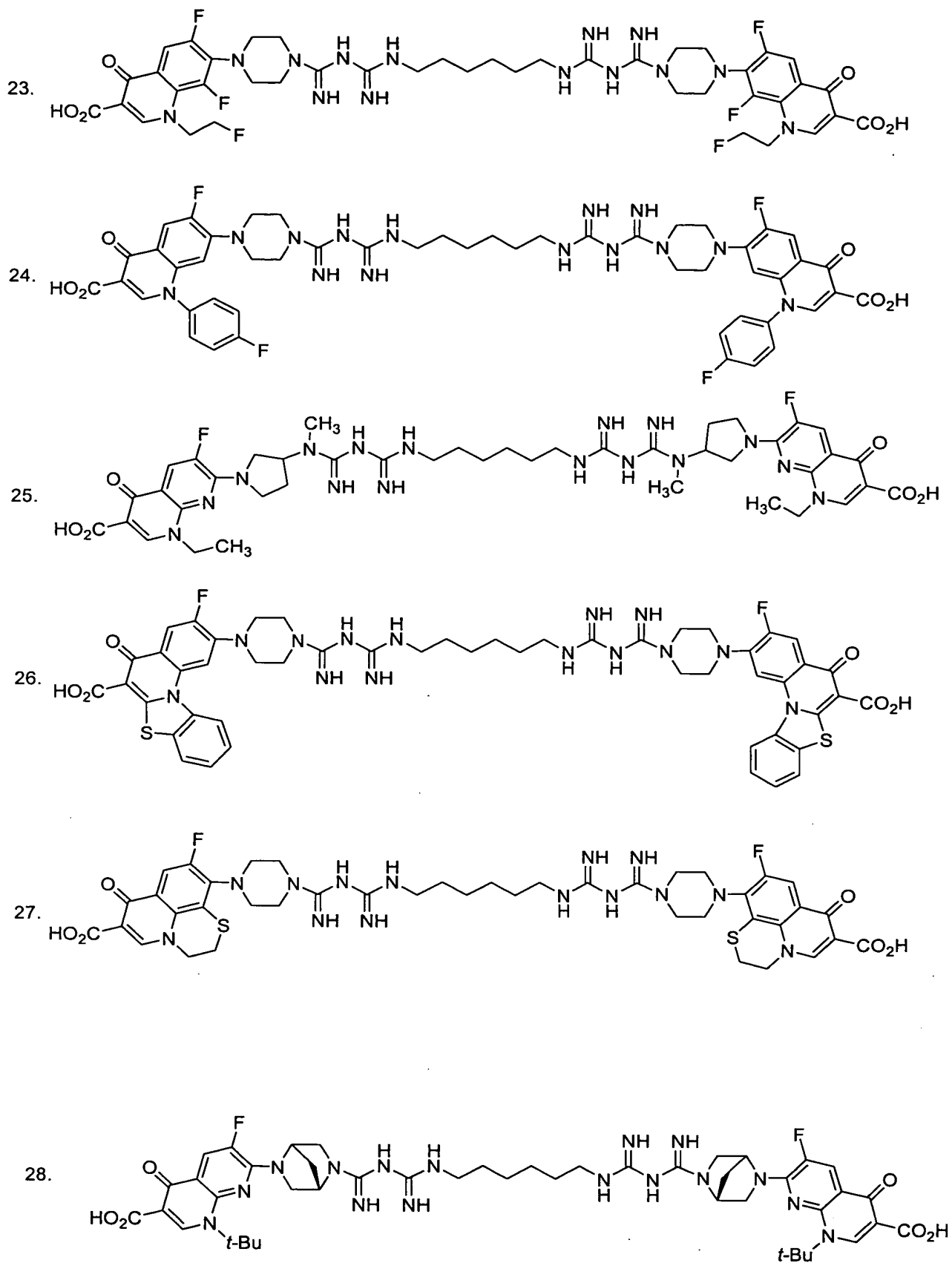


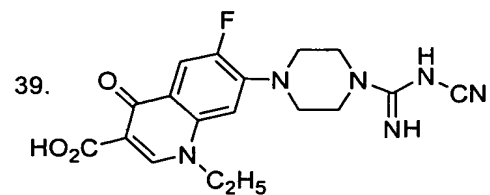
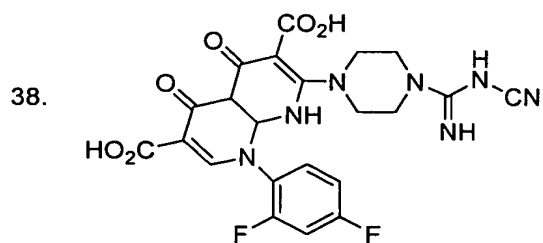
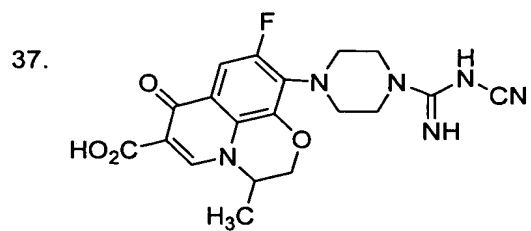
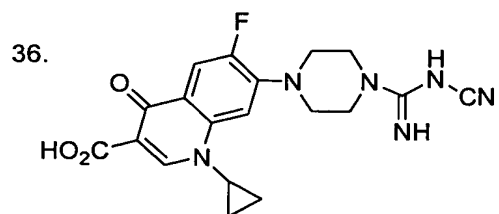
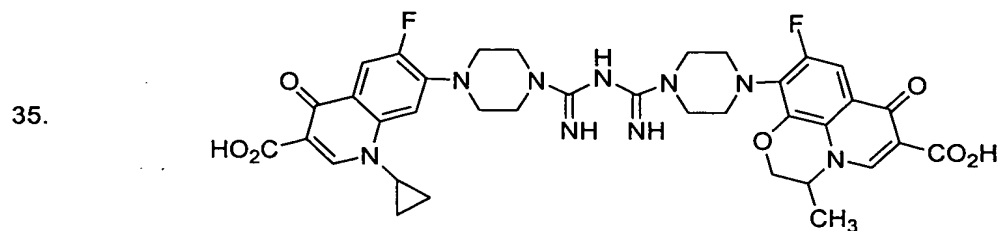
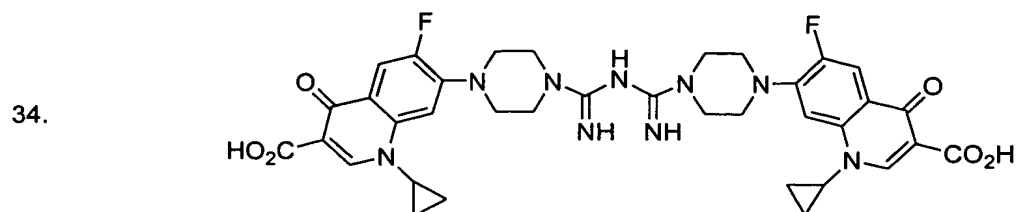
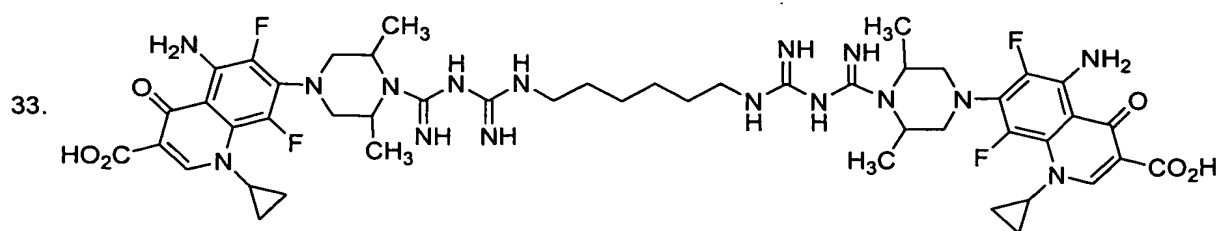


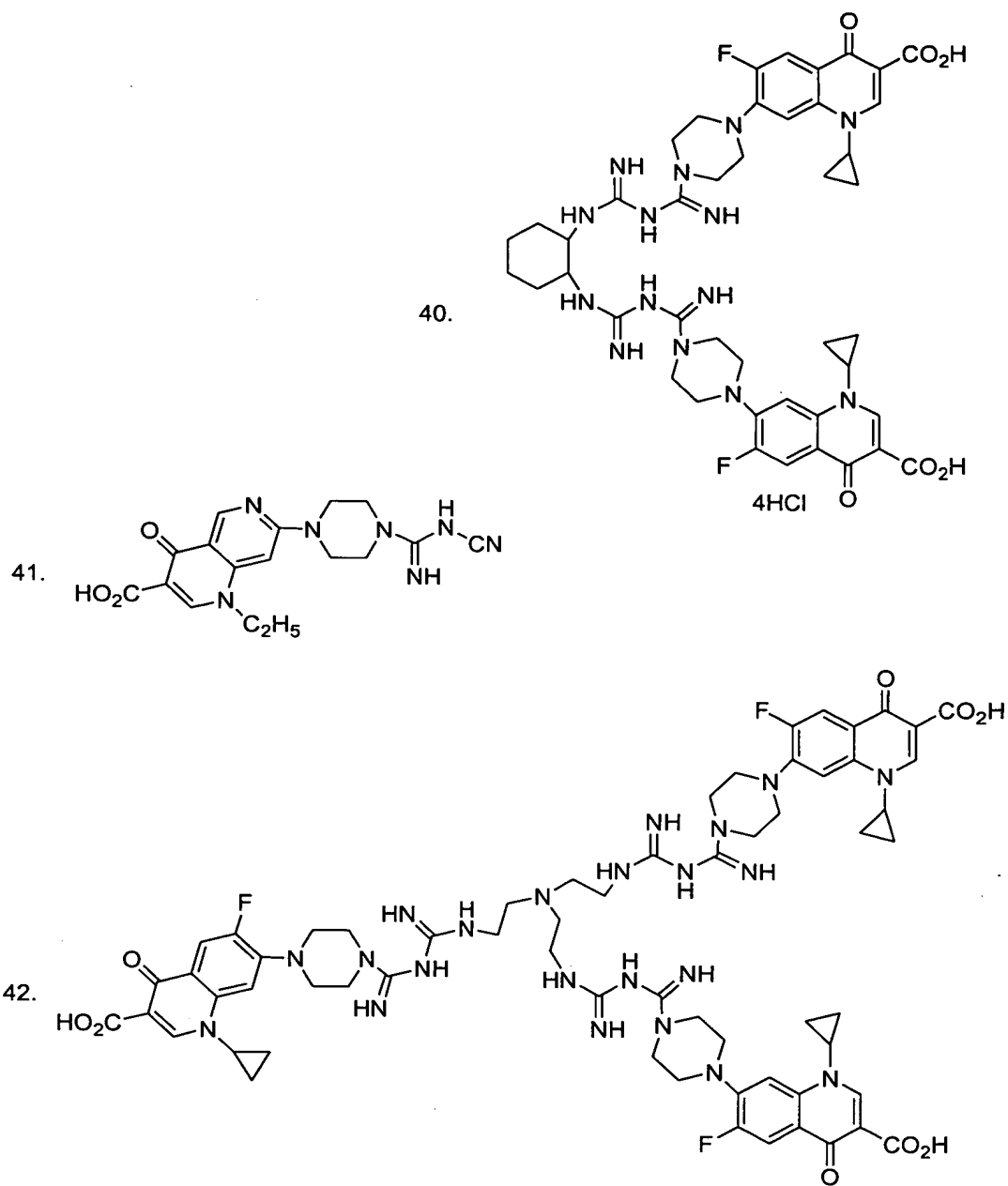


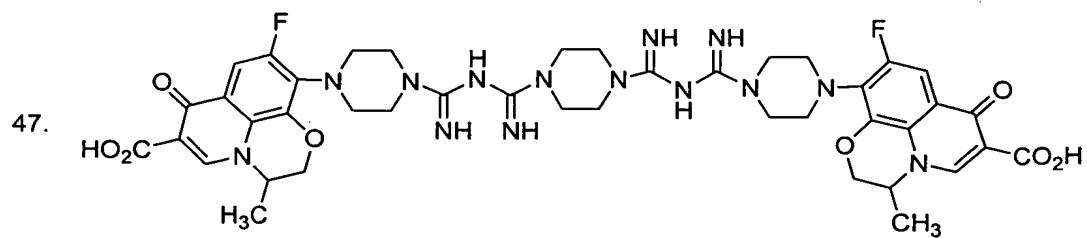
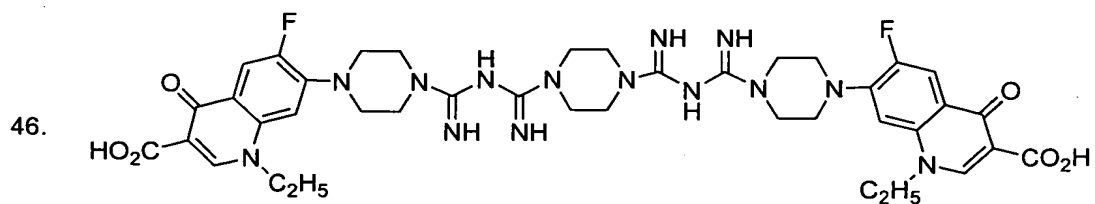
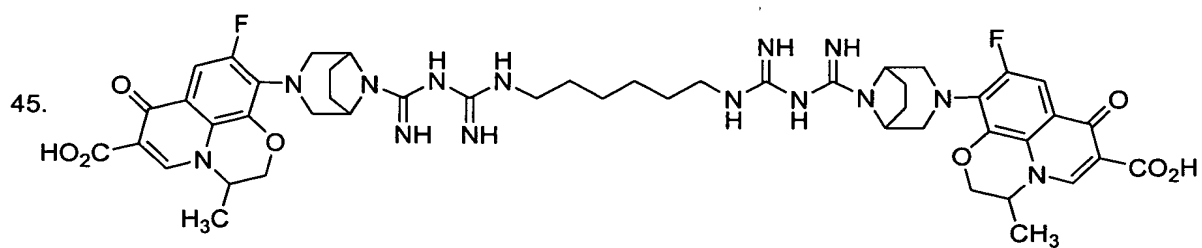
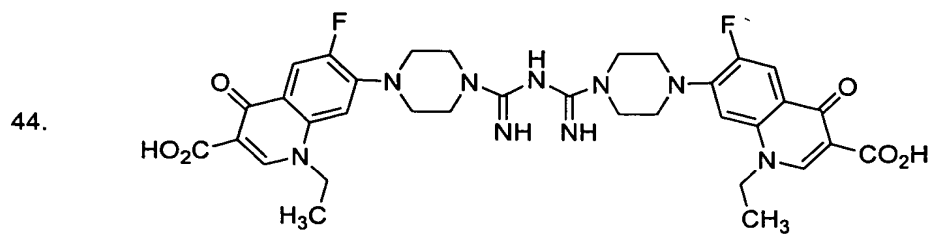
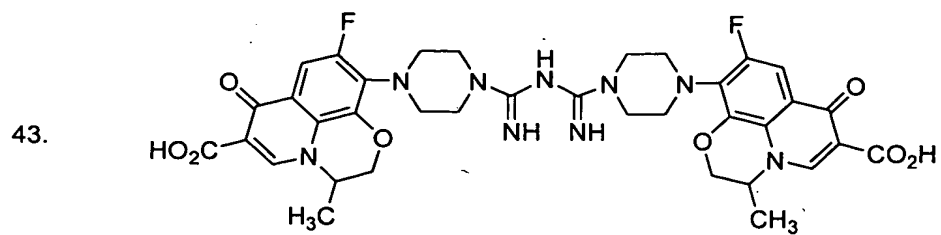




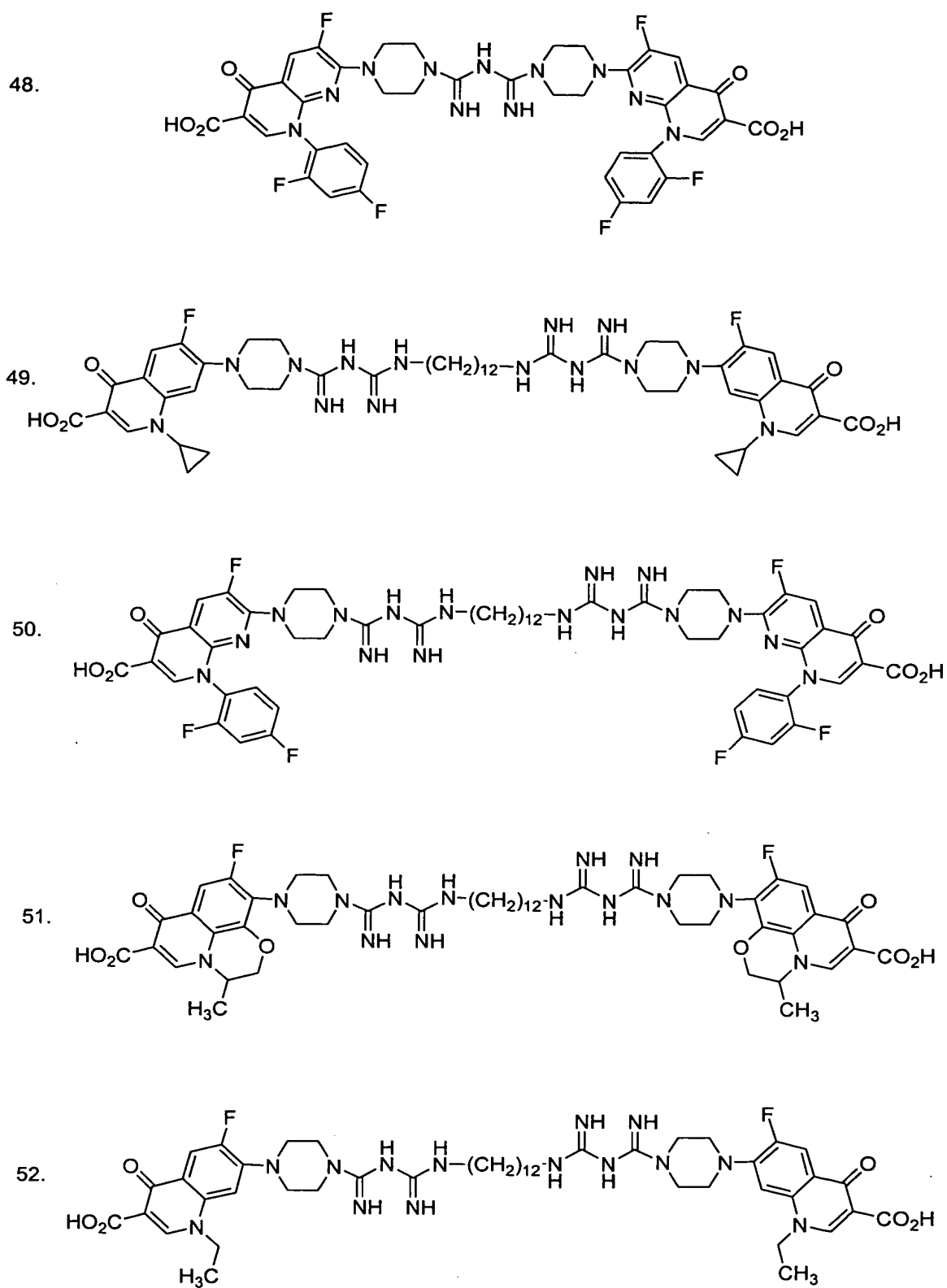


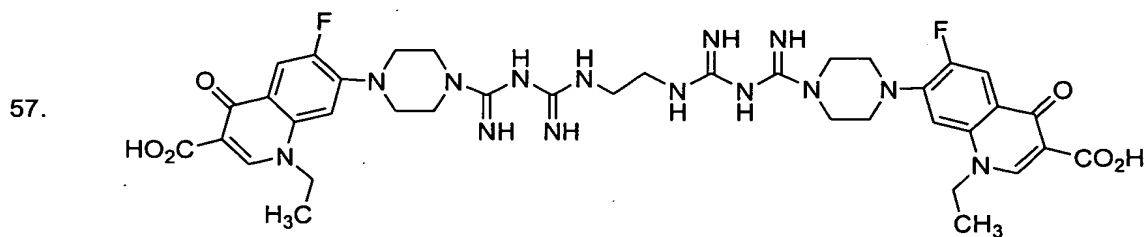
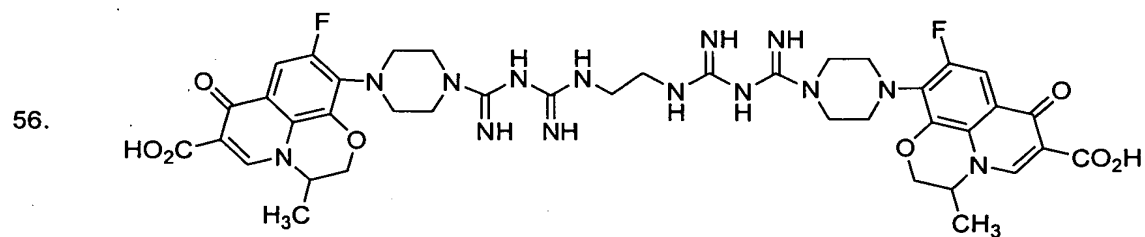
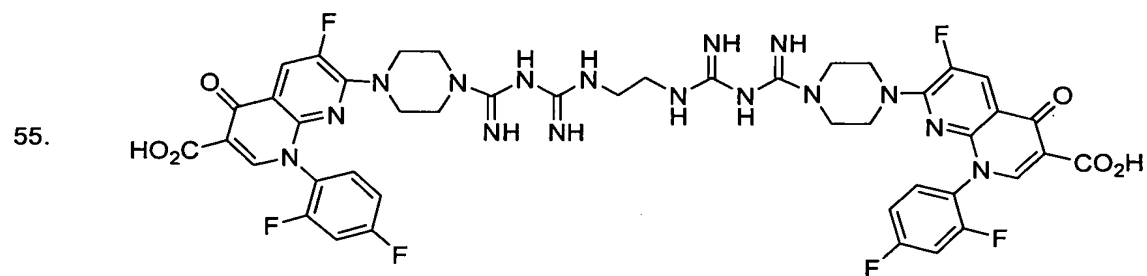
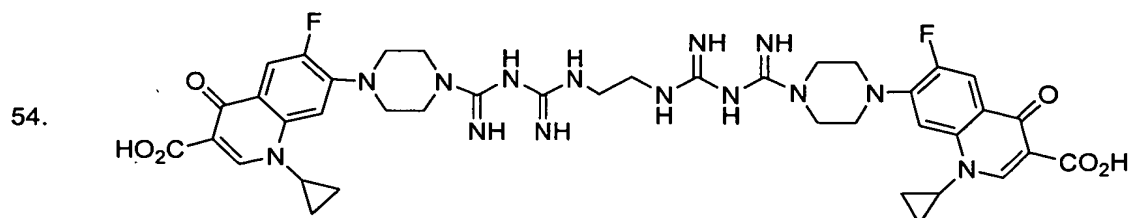
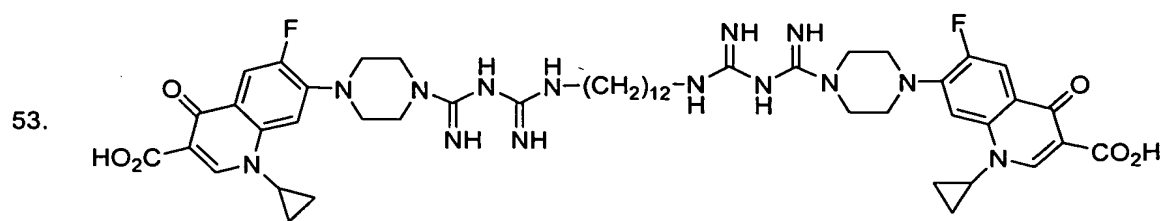


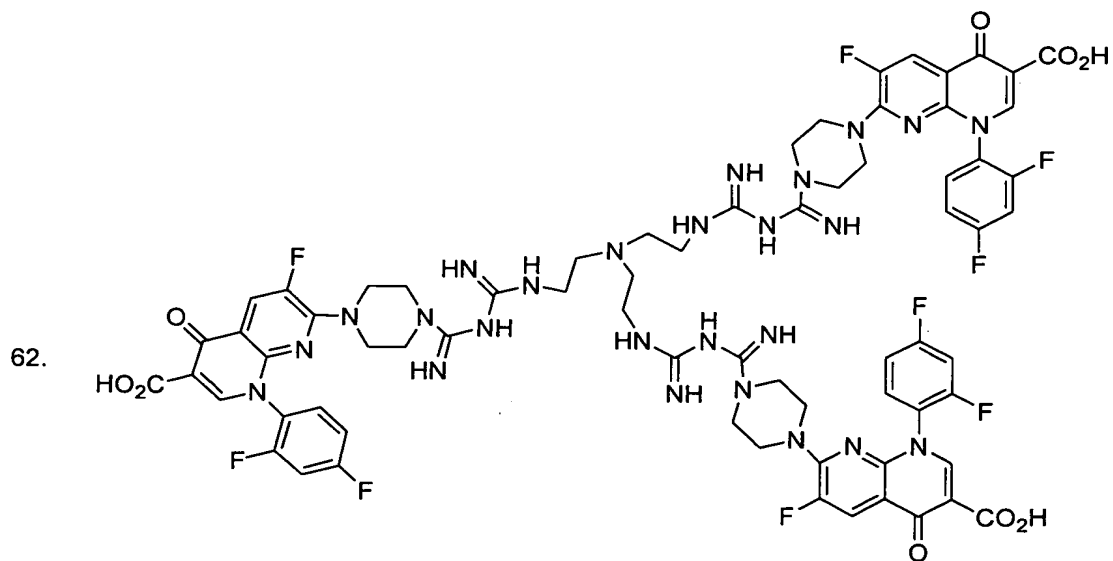
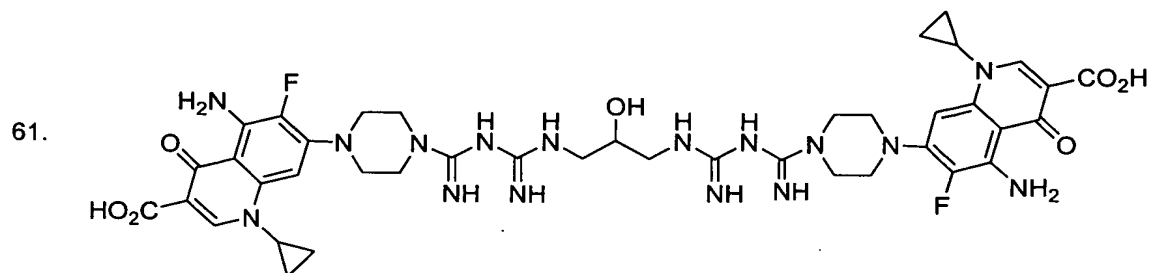
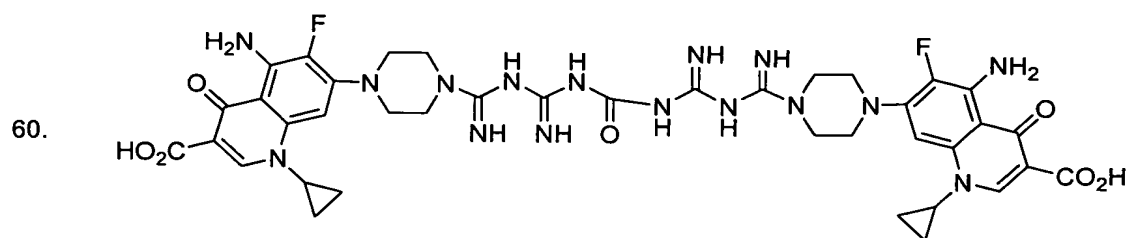
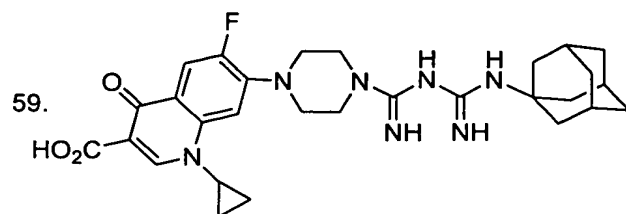
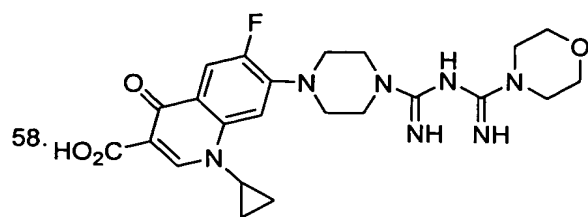


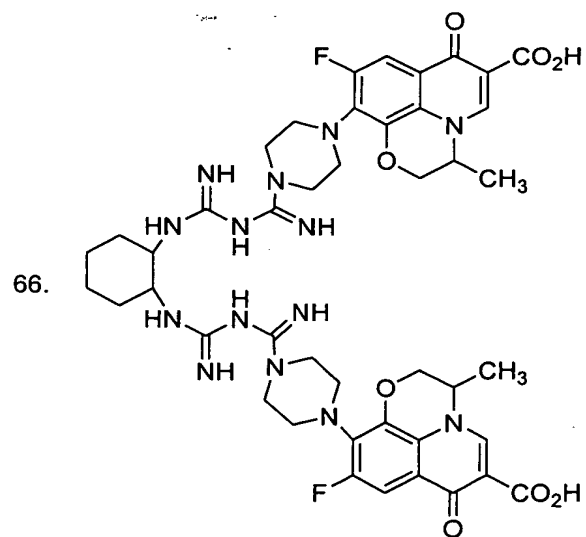
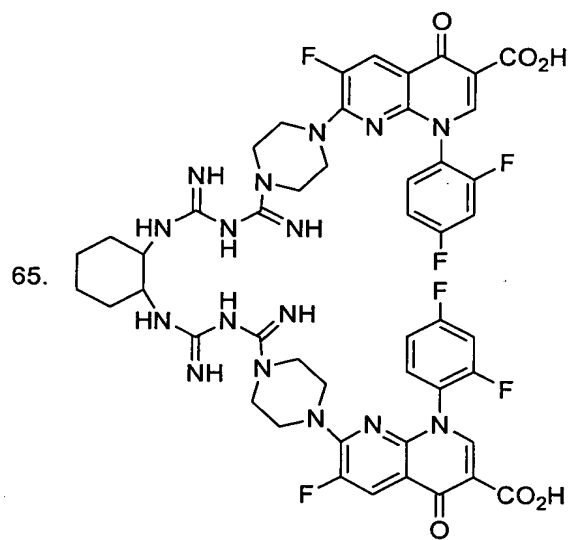
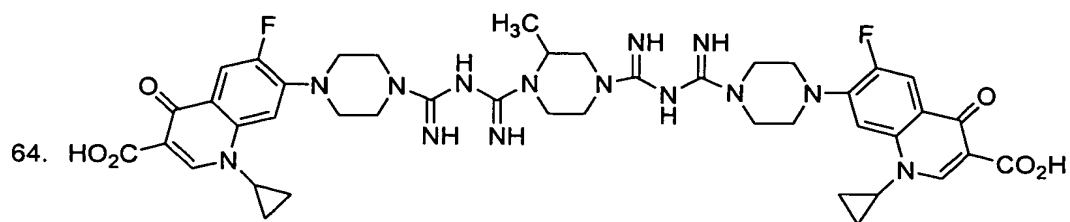
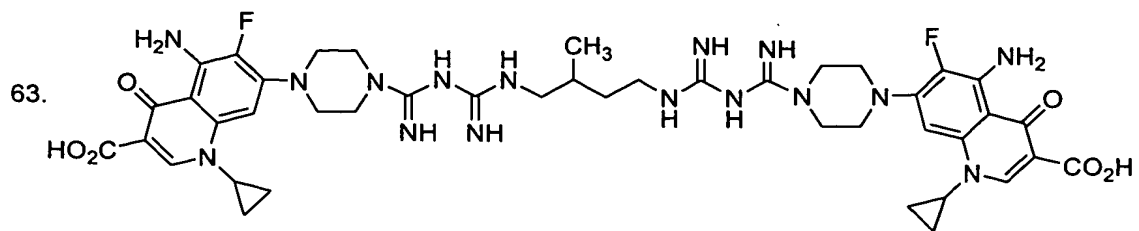


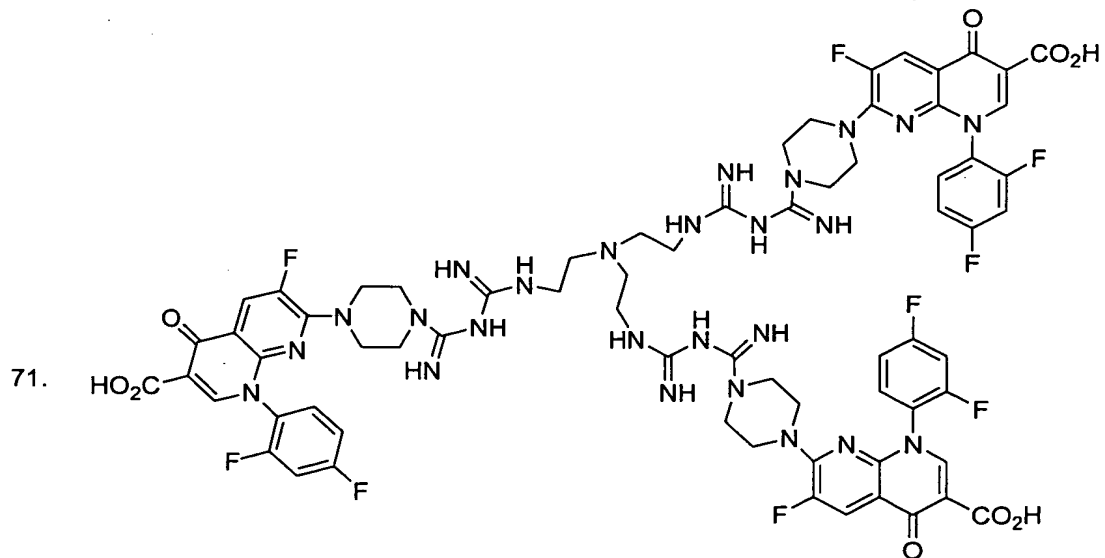
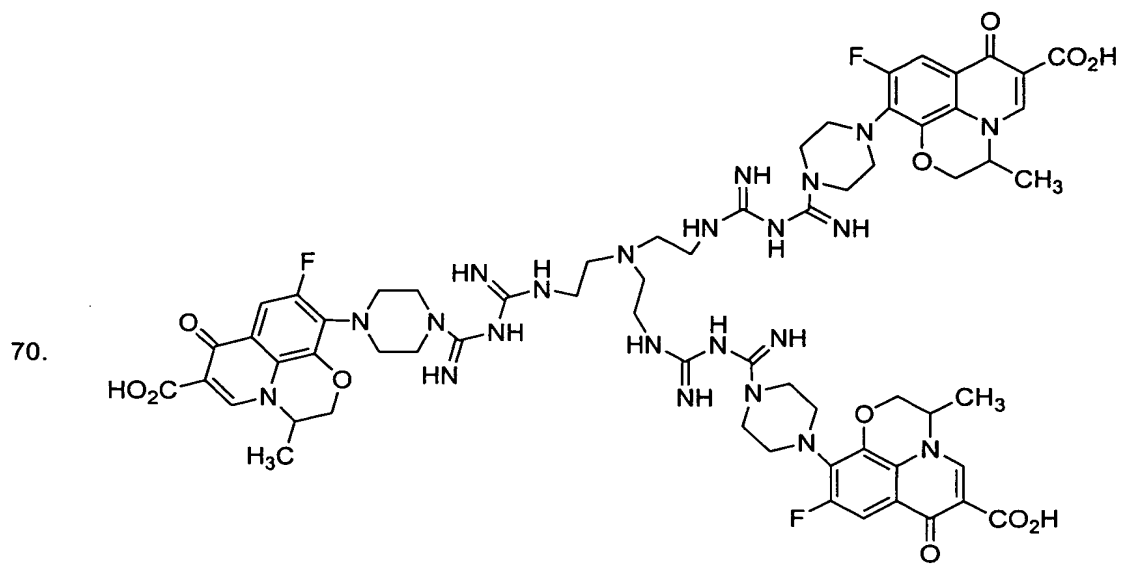
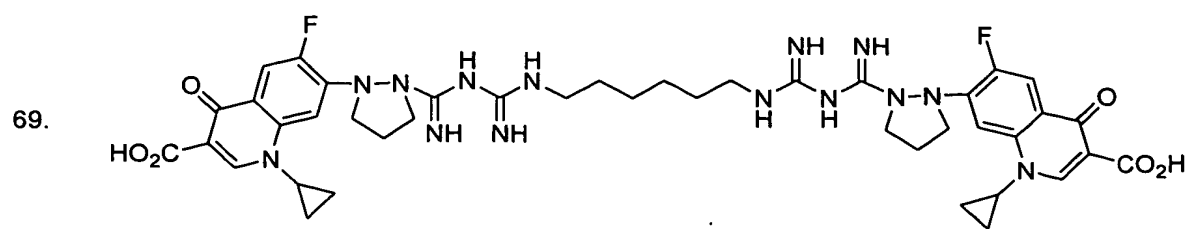




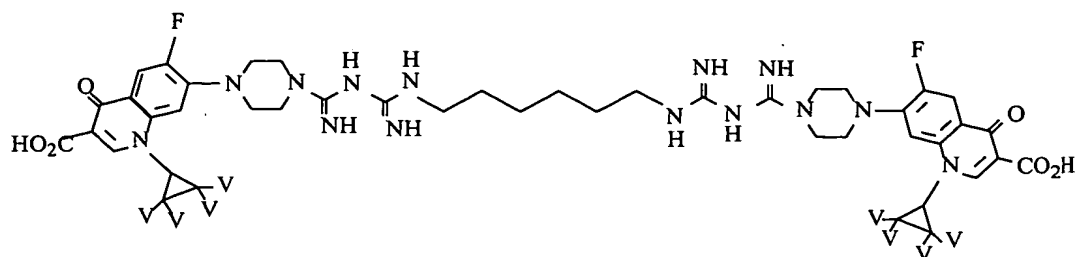








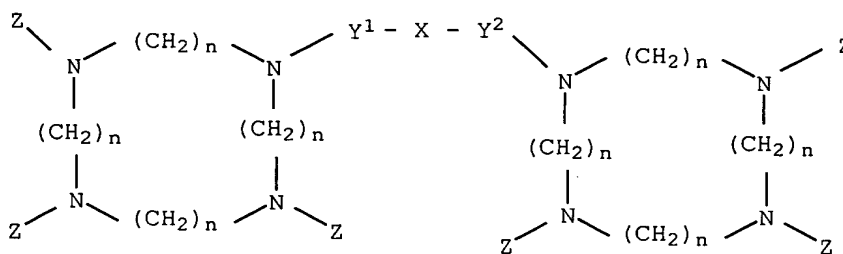
5. A compound according to claim 1, wherein the compound has the following structure:



5 where each V is independently hydrogen or halogen.

6. A compound having the following structure:

10



15 where each n is independently from 1-5;

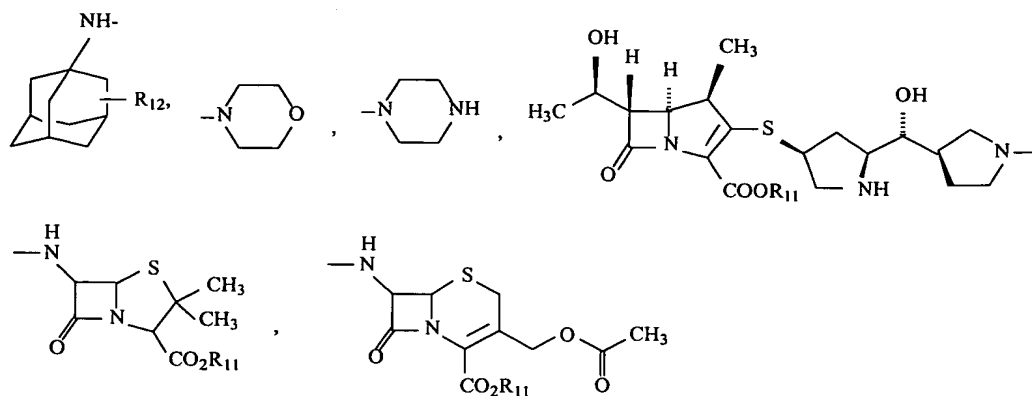
$Y^1$  and  $Y^2$  are the same or different, and are optionally substituted alkyl; optionally substituted aryl; an optionally substituted heterocycle; or a single bond;

X is optionally substituted alkyl; optionally substituted aryl; or an

20 optionally substituted heterocycle; and

each Z is independently  $-\text{C}(\text{NH})-\text{NH}-\text{C}(\text{NH})-\text{A}$

- where A is the same or different, and is selected from the group consisting of i)  
 5 hydrogen, ii) a nitrile, iii) an amino, iv) an antibacterial agent, v) an antibiotic, vi) a  
 quinolone, vii) an azaquinolone, and viii) one of the following groups:



10

- where R<sub>12</sub> is hydrogen or C<sub>1</sub>-C<sub>6</sub> straight or branched alkyl, and R<sub>11</sub> is hydrogen,  
 15 lower alkyl, an aromatic group or a heterocyclic group  
 and pharmaceutically acceptable salts thereof.

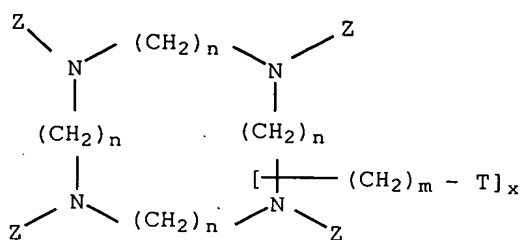
7. The compound of claim 6, wherein both Y<sup>1</sup> and Y<sup>2</sup> are single bonds.
- 20 8. The compound of claim 7, wherein X is C<sub>1</sub>-C<sub>10</sub> alkyl.
9. The compound of claim 6, wherein Y<sup>1</sup> and Y<sup>2</sup> are lower alkyl and X  
 is phenyl optionally substituted with halogen and/or lower alkyl.
- 25 10. The compound of claim 9 wherein Y<sup>1</sup> and Y<sup>2</sup> are  $-\text{CH}_2-$

11. The compound of claim 6, wherein  $Y^1$  and  $Y^2$  are lower alkyl and X is pyridyl optionally substituted with halogen and/or lower alkyl.

12. The compound of claim 11, wherein  $Y^1$  and  $Y^2$  are  $-\text{CH}_2-$ .

5

13. A compound having the following structure:



10

where each n is independently from 1-5;

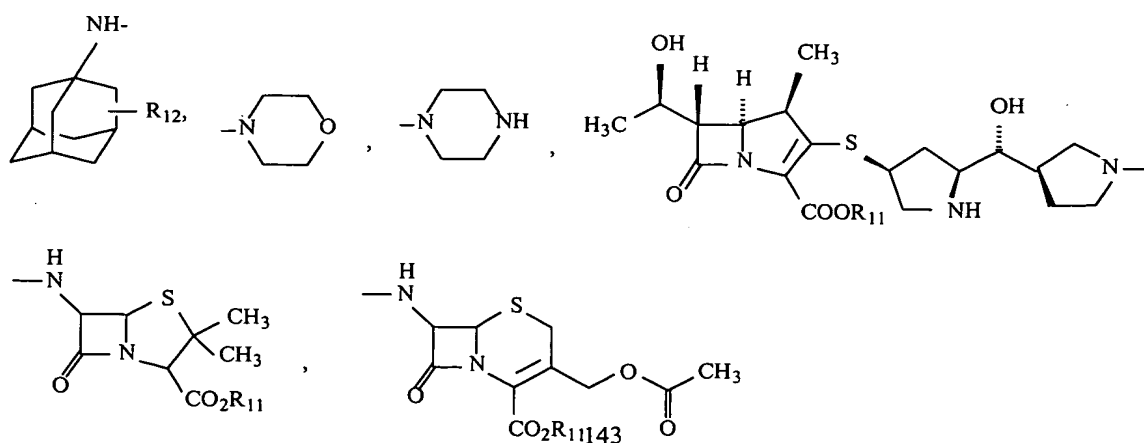
each m is independently from 0-12;

each Z is independently  $-\text{C}(\text{NH})\text{NH}-\text{C}(\text{NH})-\text{A}$ ,

15

where each A is the same or different, and is selected from the group consisting of i) hydrogen, ii) a nitrile, iii) an amino, iv) an antibacterial agent, v) an antibiotic, vi) a quinolone, vii) an azaquinolone, and viii) one of the following groups:

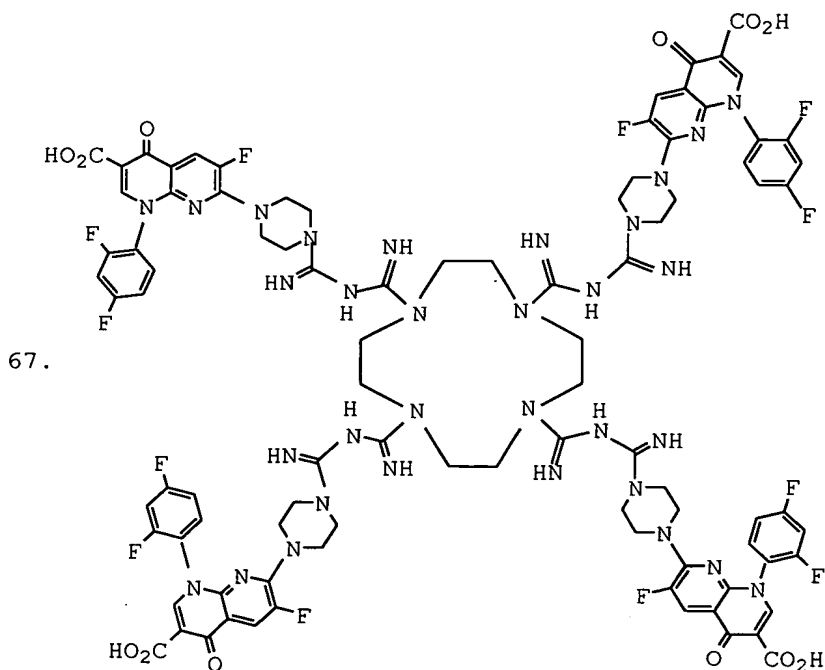
20

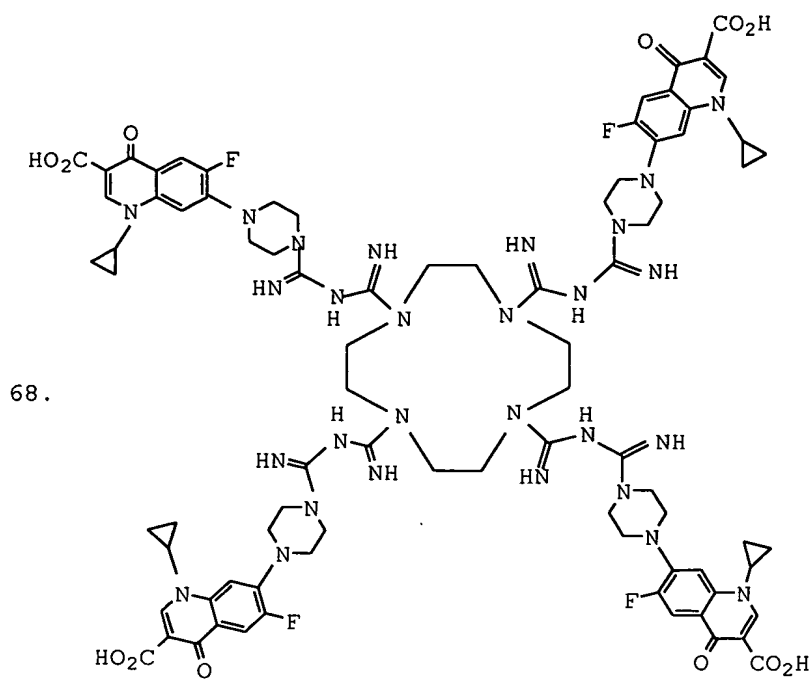


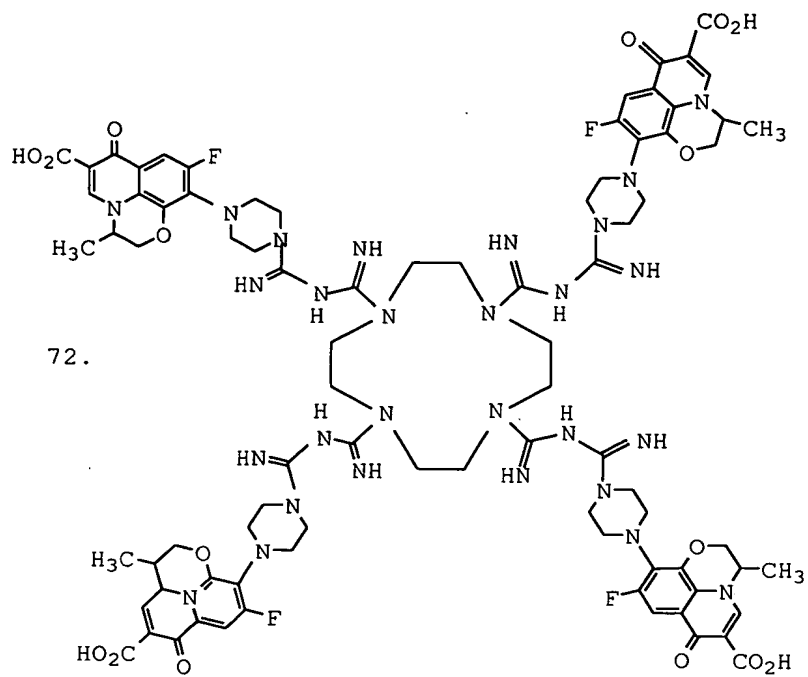


- 5 where  $R_{12}$  is hydrogen or  $C_1$ - $C_6$  straight or branched alkyl, and  $R_{11}$  is hydrogen, lower alkyl, an aromatic group or a heterocyclic group; and  
T is hydrogen, lower alkyl optionally substituted aryl or an optionally substituted heterocycle; and X is from 0-8.

- 10 14. The compound of claim 13, wherein the compound has one of the following structures:

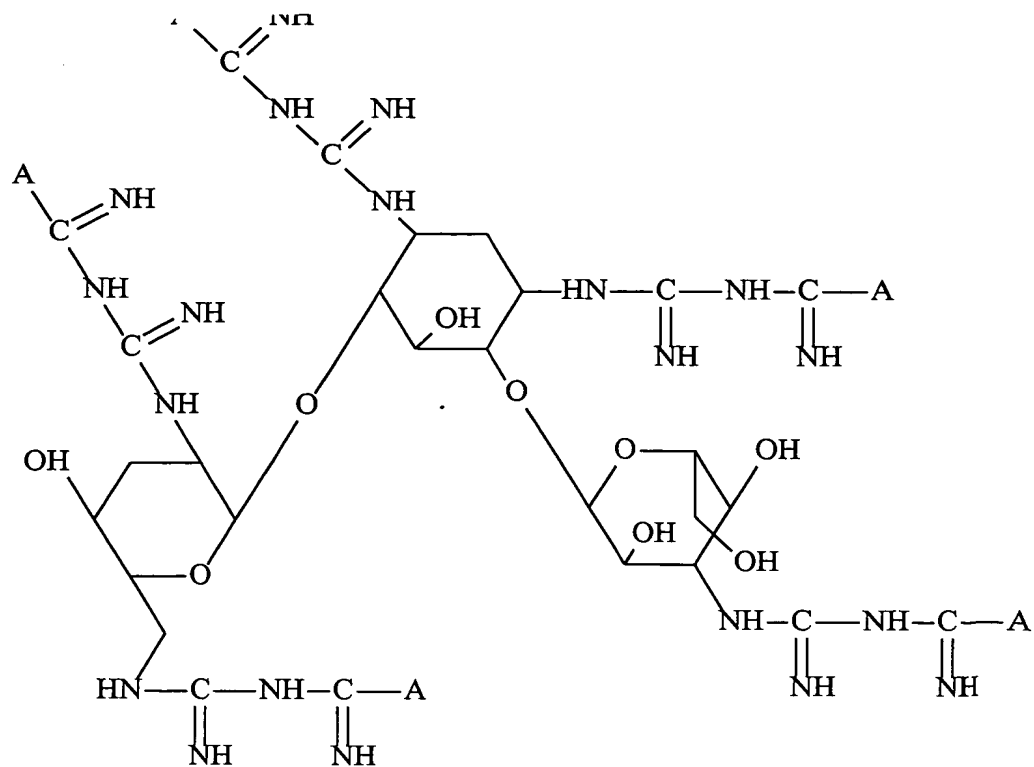






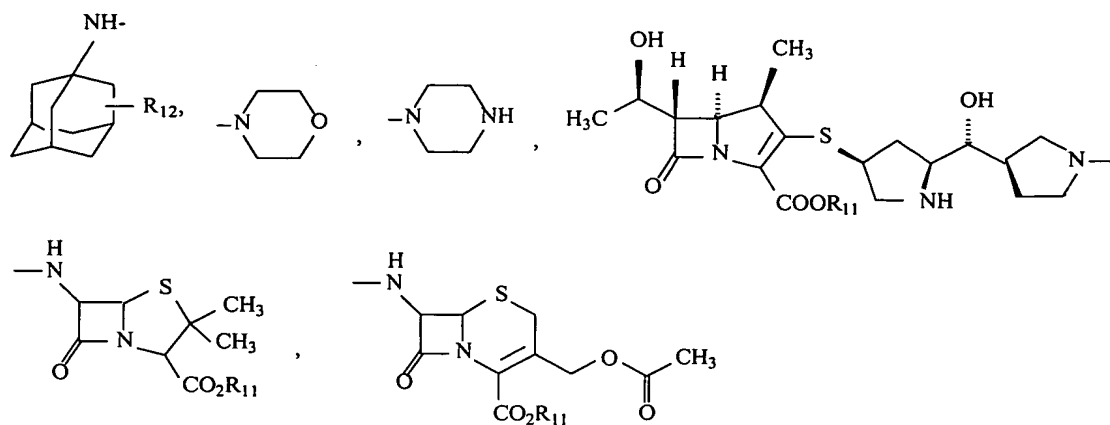
5

15. A compound having the following structure:



(VII)

- where each A is the same or different, and is selected from the group consisting of
- 5 i) hydrogen, ii) nitrile, iii) an amino, iv) an antibacterial agent, v) an antibiotic, vi) a quinolone, vii) an azaquinolone, and viii) one of the following groups:

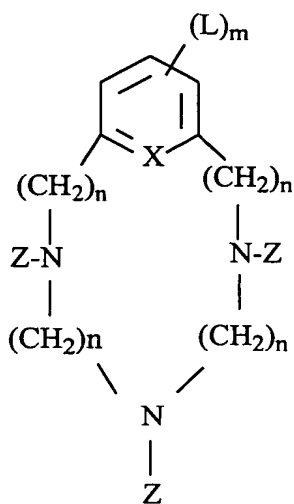


5

where  $\text{R}_{12}$  is hydrogen or  $\text{C}_1\text{-C}_6$  straight or branched alkyl, and  $\text{R}_{11}$  is hydrogen, lower alkyl, an aromatic group or a heterocyclic group; with the proviso that at least one A is not hydrogen.

10

16. A compound having the following structure:



(VIII)

wherein each n is independently from 1-5;

m is from 0-3;

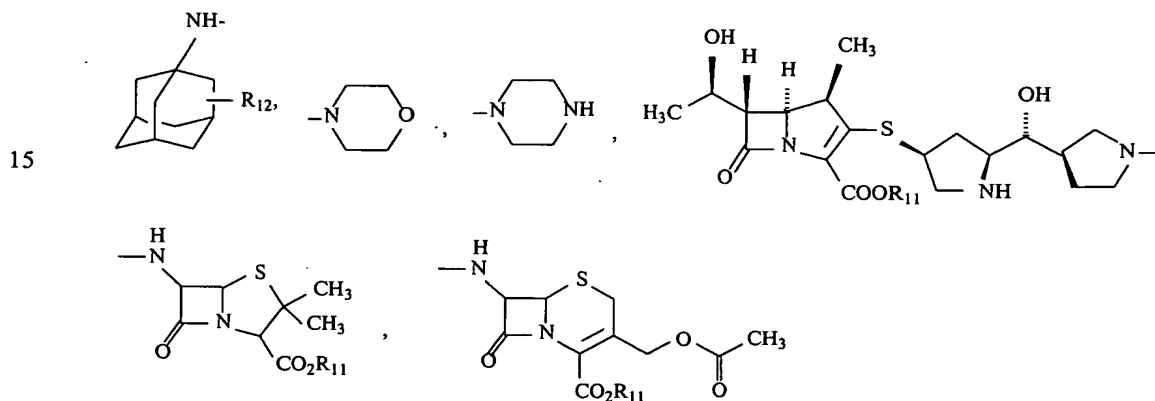
5 each L is independently hydrogen, lower alkyl, optionally substituted aryl, or nitro;

X is CH or N;

each Z is independently  $-\text{C}(\text{NH})\text{NH}-\text{C}(\text{NH})-\text{A}$  where

each A is the same or different, and is selected from the group consisting of

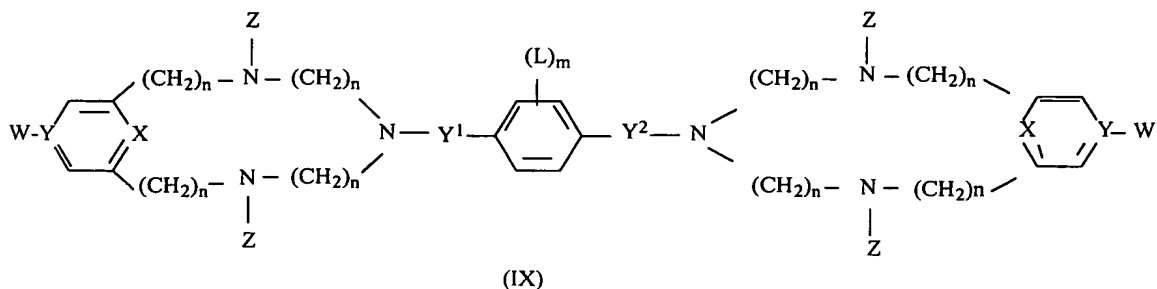
10 i) hydrogen, ii) a nitrile, iii) an amino, iv) an antibacterial agent, v) an antibiotic, vi) a quinolone, vii) an azaquinolone, and viii) one of the following groups:



where  $R_{12}$  is hydrogen or  $C_1$ - $C_6$  straight or branched alkyl, and  $R_{11}$  is hydrogen, lower alkyl, an aromatic group or a heterocyclic group.

17. A compound having the following structure:

5



where  $m$  is from 0-4;

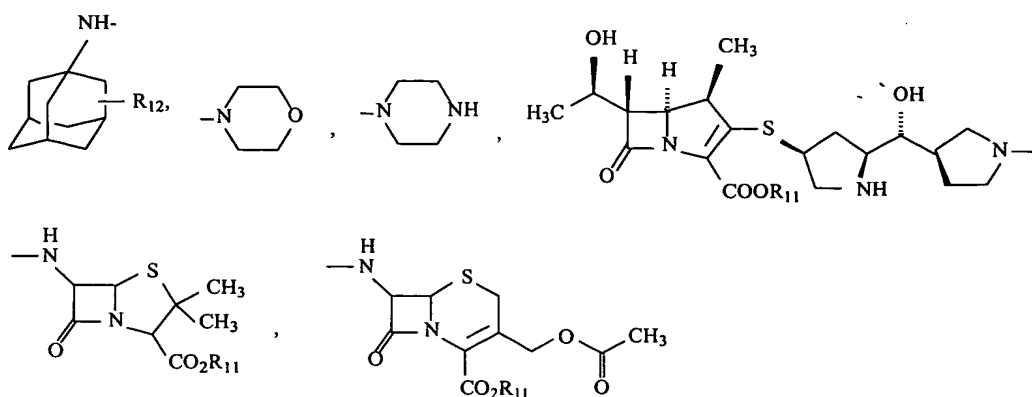
10 each  $L$  is independently hydrogen, halogen, alkyl, aryl or nitro;  
each  $W$  is independently hydrogen, halogen, alkyl, alkoxy, or aryl;

$X$  and  $Y$  are each independently  $CH$  or  $N$ ;

$Y^1$  and  $Y^2$  are each independently optionally substituted alkyl or a single bond; and

15 each  $Z$  is independently  $-C(NH)-NH-C(NH)-A$ ,

where each  $A$  is the same or different, and is selected from the group consisting of  
i) hydrogen, ii) a nitrile, iii) an amino, iv) an antibacterial agent, v) an antibiotic, vi)  
a quinolone, vii) an azaquinolone, and viii) one of the following groups:



5

where  $R_{12}$  is hydrogen or  $C_1$ - $C_6$  straight or branched alkyl, and  $R_{11}$  is hydrogen, lower alkyl, an aromatic group or a heterocyclic group; and pharmaceutically acceptable salts thereof.

10

18. An antiviral and/or antibacterial composition which comprises:

- a) an effective amount of a compound according to claim 1;
- b) a pharmaceutically acceptable carrier.

15

19. A method for preventing or treating a viral and/or bacterial infection in a mammalian host, said method comprising administering to a mammal in need thereof an effective amount of a compound in accordance with claim 1.

20. A compound having the following structure:

20





- X is optionally substituted alkyl; optionally substituted aryl; or an optionally substituted heterocycle; and

each Z is independently  $-\text{C}(\text{NH})-\text{NH}-\text{CN}$  or  $-(\text{CH}_2)_m-\text{NH}-\text{C}(\text{NH})-\text{NHCN}$   
where m is from 1 to 6.

- $$\begin{array}{ccc}
 \text{Z} & & \text{Z} \\
 \diagdown & & / \\
 \text{N} & \text{---} (\text{CH}_2)_n \text{---} & \text{N} \\
 | & & | \\
 (\text{CH}_2)_n & & (\text{CH}_2)_n \\
 | & & | \\
 \text{N} & \text{---} (\text{CH}_2)_n \text{---} & \text{N} \\
 / & & \diagdown \\
 \text{Z} & & \text{Z}
 \end{array}
 \quad
 \begin{array}{c}
 [ \text{---} (\text{CH}_2)_m \text{---} \text{T} ]_x
 \end{array}$$

152

each Z is independently  $-\text{C}(\text{NH})-\text{NH}-\text{CN}$  or  $-(\text{CH}_2)_q-\text{NH}-\text{C}(\text{NH})-\text{NH}-\text{CN}$   
where q is from 1-6, and

T is hydrogen, lower alkyl optionally substituted aryl or an optionally substituted heterocycle; and x is from 0-8.